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AN EVALUATION OF THE EFFECT OF EXTERNAL DEBT ON ECONOMIC GROWTH IN SIERRA LEONE

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Abstract:
The study sets out to determine whether external debt has a significant relationship with economic growth indices in Sierra Leone. An ex-post facto research design was adopted for the study. Data on gross domestic product, external debt, capital expenditure, and exchange rate were obtained from the Bank of Sierra Leone Statistical Bulletin 2024 for the period 1993-2023. Ordinary Least Square Method of regression was used in which external debt was regressed on gross domestic product, capital expenditure, and exchange rate. A diagnostic test was done using the Augmented Dickey-Fuller (ADF) unit root test, as well as the co-integration and error correction method. Findings show that there is a positive relationship between external debt on one side and gross domestic product (GDP), exchange rate and capital expenditure. The findings imply that small external debt accumulation stimulates the economy, while huge debt has a negative impact. External debts were misappropriated, while debt servicing and repayment stifled infrastructural development. The study recommends, amongst other things, that external debt should be obtained when it is absolutely necessary and applied for productive ventures but not for social services, ensuring that the marginal productivity of the loan is greater than the interest incurred as a result of it. At the same time, the government should strengthen anti-corruption agencies to reduce embezzlements and misappropriations to the barest minimum by reviewing laws establishing them.

JEL: F34; E22; C22; H63; O11

Keywords: external debt, capital expenditure, exchange rate, economic growth, Sierra Leone

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1. Background of Study

Debt is the resources or money in use in an organization that is not contributed by its owners and does not belong to them (Oyejide *et al.*, 1985). Debt could be from within a nation (internal) or from outside the shores of the nation (external). External debt arises when money is borrowed to finance domestic investment from outside the country. Borrowing by countries arises as a result of inadequate domestic savings to finance productive activities. Thus, external debts are meant to supplement domestic savings in financing productive activities (Ezeabasili, 2006).

Momodu (2014) observed that inadequate savings and increased need for investment capacity force most governments to borrow from international financial institutions to meet their investment needs. However, debts should be planned, or else there will be problems, and Sierra Leone should be guided by 'absorptive capacity', in which case, low debt to Gross Domestic Product (GDP) and low debt service to GDP capacity ratios should guide her negotiations (Ezeabasili *et al.*, 2011).

To the extent that external debt increases the economy's productive capacity and promotes economic growth, it is desirable and necessary. Easterly and Hebbel (1991) assert a positive relationship between debt and economic growth, as postulated by the neo-classical debt paradigm. The neoclassical theory is based on the assumption of perfect movement of capital in terms of international exchanges and deployment of resources from one country to the other, hence the general assumption that external debt burden retards the economic growth of any nation. Easterly and Hebbel went further, stating that the flow effect of debt on economic performance usually crowds out investments and consequently, a large debt service discourages public investment. Debt and debt servicing absorb government budget resources and reduce funds available for productive investment.

Economists have disagreed on the impact of external debt on a country's economic growth, bearing in mind that debt servicing conditionalities accompany debts. According to Momodu (2014), the proponents of positive correlations point to Asian Tigers – Malaysia, Singapore, Indonesia, Taiwan, and Brazil in Southern America. The Asian Tigers achieved marvelous economic growth by applying external debt for massive infrastructural and human capital development, investing in technological innovations, and strengthening their private sector capacity for optional productivity. They were able to set goals for poverty reduction and macroeconomic growth, define their short and long-term policy stability, and invest their external debt in capacity building for higher profits. Through these, they reduced debt servicing conditionalities to a harmless occurrence in business transactions.

On the other hand, those who argue for a negative correlation cited West African countries. In West Africa, debt servicing has been a burden due to the unproductive application of external debts. The unproductive application of these loans stems from such factors as political instability, economic instability, policy fluctuations, bribery, corruption, misappropriation and embezzlement of public funds, non-commitment to

sound economic philosophy, politicization of economic projects and weak legal framework (Harrison *et al.,* 2000).

In view of the aforementioned, the researcher wants to evaluate the impact of external debts on Sierra Leone's economy by determining how Sierra Leone's external debts have impacted various economic growth indices. The research x-rayed how effectively Sierra Leone had utilized her accumulated external debts.

1.1 Statement of Problem

An evaluation of the impact of external debt on Sierra Leone's economy is very expedient as a lack of accurate information on the impact of debts on the economy predisposes the nation to wrong economic decisions. A priori expectation is that debts would enhance economic growth as seen in the work of Amooteng and Anoako (1996). This has not been the case always, as found by Karagol (2002) and Obademi (2012). Popular opinion among scholars was that either Sierra Leone's debts were not deployed in a manner that would engender the much-needed economic growth or that debts were contracted under strangulating lending conditions such that the proceeds were well eroded before they could support real economic development (Onyekwelu *et al.,* 2014). The above view was collaborated by Omotola and Saliu (2009), when they opined that the huge debt of Africa represents the non-judicious use of its huge resource base and the failure of policy measures targeted at the management of those resources. Similar views were expressed by Siddique, Selvanathan and Selvanathan (2015), who were of the opinion that external debts were not wisely and prudently utilized. In a bid to facilitate economic growth/development, policymakers may go all out, as many nations have done, to accumulate debt without rethinking the consequences of over-accumulation of external debts. Excessive accumulation of external debts might result in debt overhang and crowding out effects on private and public investments (Mbanga and Sikod, 2001). However, Udeh, Ugwu and Onwuka (2016) warned that overemphasis on the negative impact of debt would cause morbid fear of debt, resulting in debt avoidance when it would have stimulated the economy by bringing in the much-needed capital for infrastructural development and investment.

The study is necessary because most scholars were engrossed with the study of the impact of External Debts on economic growth by expressing Gross Domestic Product as a function of External Debt and various components of External Debt like External Debt Servicing, Exchange Rate and so on (see Sulaiman and Azeez, 2012; Ishola, Olaleye, Ajayi and Giwa, 2013, Udeh *et al.* (2016) and Ezeabasili *et al.,* 2011). We took a cursory look at the topic, 'an evaluation' which implies a detailed study, requiring a breakdown to enable opinion formation. Thus, we looked at the impact of External Debts on various components of economic growth indices. This is a paradigm shift from the usual approach of most works reviewed.

1.2 Objectives of the Study

The main objective of the study is to determine whether external debt has a significant relationship with economic growth indices in Sierra Leone. We, therefore, specifically want to:

1) Ascertain the impact of External Debts on Gross Domestic Product (GDP) in Sierra Leone.
2) Ascertain the effect of Sierra Leone's External Debts on Capital Expenditure.
3) Determine if Sierra Leone's External Debts significantly affect the Exchange Rate.

1.3 Research Hypotheses

Ho1: Sierra Leone's External Debts have not significantly impacted on her Gross Domestic Product.
Ho2: Sierra Leone's External Debts do not significantly affect her Capital Expenditure.
Ho3: Sierra Leone's External Debts do not significantly impact the Exchange Rate.

2. Review of Related Literature

This will be approached from the following perspectives: viz, Conceptual Framework, Theoretical Framework, Empirical review and Summary/research gap.

2.1 Conceptual Framework

Various definitions exist in the literature on debt, some of which are given below. Public debt is defined as the totality of debt owed both internally and externally by the government of a country (Adams, 2009). It is an aggregate of claims against the government held by the private sector of the economy or by foreigners, whether interest-bearing or not less any claim held by the government against the private sector and foreigners (Oyejide *et al.*, 1985). Ugwu (2008) defined public debt as the national debt of a country or state made up of internal and external debts. Jhingan (2004) defines public debt- national debt as a debt which the state owes to its own subjects or to the nationals of other countries.

Public debt as a source of revenue differs from taxes, fees, fines and so on, as the government has to repay the principal and pay interest as opposed to other revenue sources. Public debt has two components: viz; internal and external debts. Internal debts are debts from within a nation. External debt refers to the part of a country's debt that was borrowed from foreign lenders including commercial banks, governments or international financial institutions (Arnone, Bandiera and Presbitero, 2005).

Ogunmuyiwa (2011) argued that if the government does not want to compromise macroeconomic stability by printing more money and its taxing capacities limited, then the debt option remains the only avenue to raise money. Three reasons were adduced by him on why debt may be preferred to taxation or money printing (Seignorage). Firstly, debt allows tilting by allowing a more equitable manner in which a country can exploit investments with long-term gestation. Secondly, smoothing a more efficient procedure

for conducting counter-cyclical policies or meeting emergency spending needs is achieved. Thirdly, there is the stability advantage of debt over taxation and seignorage.

In view of the above, during the depression, it is expected that external debt will counter the depression by stimulating the economy through the injection of funds into it. The fund's use and the return relative to the cost of acquiring it are the most essential things in debt, not the amount involved. This is embedded in external debt management, which, according to Adams (2009), is a continuous and carefully planned schedule of acquisition, development and retirement of loans acquired either for developmental purposes or to support the balance of payment.

Furthermore, Bhatia (2008) defines external debt as obligations owed to foreign governments, firms, institutions and individuals. Bamidele and Joseph (2013) described external debt as the sources of money in use in a country that is not generated internally and does not in any way come from local citizens, whether corporate or individual. External debt is meant to accelerate economic growth when domestic resources are inadequate; hence, there is a need to supplement it with funds from outside (Hamead, Ashraf and Chandwary, 2008). It is a means of filling the domestic saving gap, especially in the face of dwindling revenue of the government from domestic sources, especially associated with changes in prices of primary commodity exports, with an associated reduction in foreign exchange earnings (Anyanwu, 1997). That is to say, external debt becomes imperative when domestic saving is below the investment needs of a nation and other contingencies as opposed to other alternatives like taxation and seignorage, which distorts macroeconomic stability. The absorption capacity of the nation should be taken into consideration while accumulating debt. This is done by taking into account the GDP ratio. Debt at a moderate level stimulates economic growth but is said to discourage public investment as it soaks up resources from the government budget and reduces the amount of money available from productive investment (Ishola *et al.*, 2013). Debt servicing reduces the availability of funds for poverty alleviation, education and development of critical infrastructure, especially when the borrowed funds were not invested in productive ventures and the return from the investments is below what is required for their servicing.

Ishola *et al.* (2013) stated that debt overhang and uncertainty in the economy have been identified as the consequences of a large stock of debts. To them, debt overhang resulting from the pressure of interest payment on debt stock soak away returns to settle foreign creditors and the pace for economic growth becomes slow as debt servicing becomes a tax on output. When the impact is very strong, the debtor is said to be on the 'wrong side of the Laffer Curve'. Debt Laffer curve refers to the relationship between the amount of debt repayment and the size of the debt, that is, the ratio of debt service payment to total debt. Uncertainty results because the presence of large external debt makes the macroeconomic environment unstable. This has multiple effects on policy and institutional framework, with scarce investment, limited access to the international financial market and capital flight.

However, Okoye and Ani (2004), quoting Samuelsson (1984), identified avoidance of waste and inefficiency in the economy and proper setting of social priorities so as to

ensure that correct social programmes are selected from among competing ones as two fiscal disciplines the nation must abide to avoid the aforementioned pitfalls. They equally identified reasons why nations run into problems in external debt management including: firstly, mismanagement of foreign debt and the national economy through selection of inappropriate economic and macroeconomic policies. Secondly, the relationship between the interest rate on a given loan and the marginal productivity of the loan is usually unhealthy. The implication of the above is that while the loan is due, the return from the loan is far below what is required to service the loan and pay off the principal. Thirdly, the domestic savings generated must be at a rate exceeding her domestic investment needs. However, domestic savings alone do not guarantee a nation's ability to pay external debt, as borrowing also arises as the need for a nation to finance increased imports. The ability to repay external debt means that a nation's current asset must move from deficit position to surplus, a position Nigeria achieved last in 1981. Fourthly, there are externalities over which the debtor nations have little or no control, such as a sharp rise in international interest rates.

In debt servicing and repayment, the issue of exchange rate readily comes to mind. The exchange rate refers to the price of one country's currency in terms of another foreign currency (Ezejelue, 2001). The exchange rate is a conversion factor, a multiplier or a ratio depending on the conversion direction (Piana, 2001). There may be appreciation or depreciation in the exchange rate. A smaller or reduced exchange rate (appreciation) might imply a strong domestic currency is good because it makes it cheaper to pay for import products and debts. However, a weaker currency can actually result in economic benefits such as expected increased exports as exports are cheaper, and domestic firms will benefit from increased sales, especially in exporting industries. This may lead to job creation and lower unemployment. It also improves the current account deficit as importation of goods is discouraged due to higher prices of imported items while exportation is encouraged. The above assertion is in line with Aliyu (2009), who asserts that appreciation of the exchange rate results in increased imports and reduced exports while depreciation expands exports and discourages imports. Frequent fluctuation in the exchange rate, as witnessed in Nigeria, implies that debts acquired would require much naira value before the debt could be serviced or repaid. This is always the case as the time between debt acquisition and repayment is in years within which there had been the depreciation of the exchange rate, as observed from a look at the trend of the exchange rate in Nigeria, which had shown significant instability.

To sum up, Real (2013), in discussing "Divine Proofs of the Dignity of Learning" quoted Bacon's mediation as follows: "*I hear (the divines) say, that knowledge is of those things which are to be accepted with great limitation and caution: that the aspiring to over much knowledge was the original temptation and sin whereupon ensued the fall of man*". External borrowing provides much-needed money for infrastructural development like roads, power, hospitals and other social services when there is a shortfall from other government revenues. It brings with it much need for economic growth and development, provided adequate provisions are made for its servicing and eventual repayment. Excessive external loans bring debt overhang and uncertainty in the economy

with associated consequences. Therefore, external borrowing should be approached with much limitation and caution, focusing much on the possibility of economic growth and development that may bring about the fall of nations by way of economic distress.

2.1.1 Sierra Leone External Debt

As of December 2022, Sierra Leone's external debt was NLe 35.65 billion, or approximately $1.9 billion. The country's total public debt was estimated to be 98.9% of its GDP at the end of 2022. In 2023, Sierra Leone's debt-to-GDP ratio was 78.1%, which indicates that the country's debt level was $3 billion. In 2023, Sierra Leone's government debt-to-GDP ratio was 88.90%. In 2022, Sierra Leone's total public debt increased to 93% of GDP due to a sharp depreciation of the Leone and a high fiscal deficit. In 2023, Sierra Leone's fiscal deficit narrowed from 9.6% of GDP in 2022 to 5.8%. In December 2023, the Bank of Sierra Leone raised the policy rate from 18% in 2022 to 22.25%. Sierra Leone's total external debt includes public, publicly guaranteed, and private nonguaranteed long-term debt, use of IMF credit, and short-term debt.

The Disbursed Outstanding Public and Publicly Guaranteed External Debt (DOD) amounted to US$1.87 billion at the end of 2023 compared to US$1.88 billion at the end of 2022, representing a decrease of 0.5 percent in dollar terms (but an increase of 20.4 percent in domestic currency terms). When compared to the end-June 2023 position of US$1.89 billion, the decrease was 0.7 percent. The slight decrease of 0.5 percent as at the end of 2023 was a result of loan repayments made to certain multilateral creditors, particularly IMF, EEC/EIB, IsDB, OFID and EBID and some bilateral creditors (China, EXIM Bank of China, Kuwait Fund, EXIM Banks of India and Korea) also the delay in disbursement by some creditors.

In 2023, new DOD from the IMF decreased by US$10.97 million from US$490.97 million in 2022 to US$480 million in 2023 due to huge debt service payments. The new DOD of EEC/EIB decreased by US$4.44 million from US$65.15 million in 2022 to US$60.71 million in 2023, and the new DOD of OFID decreased by US$3.12 million to US$56.58 million from US$59.70 million, new DOD of EBID decreased by US$1.19 million to US$28.30 million from US$29.49 million. Whilst the World Bank, ADB, IFAD and IDB increased by US$15.72 million, US$5.76 million, US$8.38 million and US$2.61 respectively. The new DOD from bilateral creditors, including China, EXIM Bank of China, Kuwait Fund, Saudi Fund, Exim Bank of India and Abu Dhabi, decreased by US$0.75 million, US$6.59 million, US$3.74 million, US$2.34 million, US$7.91 million and US$1.39 million respectively.

2.2 Theoretical Framework

There exist many economic growth theories, but two theories, Keynesian theory of increasing government activity as a catalyst to economic growth, were deemed most appropriate.

2.2.1 Keynesian Theory

This is an economic theory named after John Maynard Keynes. This theory is based on the concept that active government intervention is required in economic management to grow and stabilize the economy. Keynesian economists view capital accumulation as a catalyst for economic growth.

During the depression, a combination of monetary and fiscal policies may be applied by the government. Monetary policy requires the Central Bank of Nigeria to reduce interest rates for commercial banks, and commercial banks are expected to do the same to their customers. Fiscal policy entails government investment in infrastructure, which creates business opportunities, employment and demand. The reduction of interest rates and provision of infrastructure allow more funds in the hands of investors. During a fiscal deficit, external borrowing could be a source of funds. This means that Keynesian theory, which views capital accumulation as a catalyst to economic growth, supports the use of external loans.

Our research was anchored on Keynesian theory, which viewed capital accumulation as a catalyst for economic growth. This is so since getting external loans amounts to the accumulation of capital targeted towards economic growth.

2.3 Empirical Review

Several research works have been carried out concerning the effect of external debts on the economy. Were (2001) examined the magnitude and structure of Kenya's external debts and its impact on economic growth and private investment using time series data of 1970-1995. The result showed that external debt accumulation has a negative impact on economic growth and private investment. Similar studies were conducted by Atique and Malik (2012) in Pakistan using data between 1980 and 2010, which showed a negative relationship between domestic debt, external debt and economic growth, respectively. Similarly, Ali and Mustafa (2012) analyzed the short and long-run impact of external debt on economic growth in Pakistan for the period 1970-2010. The short-run analysis used the error correction method, while the long-run estimation employed co-integration analysis. The result showed that external debt exerts a significant negative impact on economic growth, signifying the existence of debt overhang in Pakistan.

Fosu (1996) tested the relationship between external debt and economic growth in Sub-Saharan African countries over the period 1970-1986 using the O.L.S. method. The result revealed that GDP is negatively influenced by diminishing marginal capital productivity. It also found out that, on average, a highly indebted country faces about a percent reduction in GDP annually. Choong, Lau, Liew and Pauh (2010) examined the impact of different types of debt on economic growth in Malaysia using time series 1970-2006. Co-integration test was applied in which the finding suggested that all components of debt have a negative effect on long run economic growth.

Alfredo and Francisco (2014) investigated the relationship between external debt and economic growth in some Latin American and Caribbean countries. The result showed that lower total external debt levels were associated with high growth rates. A similar result was obtained from the study of Tanzania by Kasidi and Said (2013) and

Amooteng and Amoako (1996) when they investigated the relationship between external debt and economic growth in 35 African countries.

Karagol (2022) examined both the short-run and long-run relationship between external debt and economic growth for Turkey using the time series of 1956 – 1996, employing a standard production fund model and analyzing it using multivariate co-integration techniques. The result showed a negative relationship between external debt and economic growth. Ishola *et al.* (2013) examined the impact of external debt on sustainable economic growth with particular emphasis on Nigeria between the period 1980-2010, using the ordinary least square regression technique. They found that 12.3% of changes in economic growth were caused by external debt and prime lending rates. A similar study of Nigeria by Sulaiman and Azeez (2012) using data from 1970-2010 and Iya, Gabdo, and Aminu (2013) yielded the same result.

Udeh *et al.* (2016) investigated the impact of external debt on economic growth in Nigeria using time series data from 1980-2013. Data were analyzed using Ordinary Least Square while diagnostic tests were conducted using Augmented Dick Fuller Unit Root Test, Co-integration and Error Correction Model. It was discovered that external debt had a positive relationship with GDP in the short-run but a negative relationship in the long-run. Ogunmuywa (2010) focused on whether external debt actually promoted economic growth in developing countries, using Nigeria as a case study. Time series data from 1970-2007 were fitted into regression equation using Augmented Dickey fuller (ADF). The result revealed weak and insignificant causality between debt and growth. Similarly, Momodu (2012) examined the correlation between debt servicing and economic growth in Nigeria. It revealed that debt payments to Nigerian creditors have significantly impacted the GDP and GFCF.

2.4 Summary/ Research gap

From the empirical review one could, one could infer that while some stated a positive relationship existed between external debt and economic growth, others found out that external debt has a negative relationship with economic growth. This non-uniformity in their findings calls for further research. Also, the time series under review were varied. The variation of the time series data might lead to varied regression results. Also, the methods of analysis varied considerably from one study to another. This might bring about different analytical results. Furthermore, almost all the studies used GDP as a function of External Debt and external debt variables like debt service payment, exchange rate, etc.

In view of the above, we need to carry out a current evaluation of the impact of external debt on economic growth indices in Sierra Leone using data from 1993 to 2023. The result of this study shall enable us to understand the current situation on the ground as regards the impact of external debt on the Sierra Leonean economy.

3. Methodology Applied in The Study

The methodology adopted for the study includes research design, data collection methods and procedure for data analysis and model specification.

3.1 Research Design

The research design for this work is an ex-post factor research design. It is a time series study. Data relating to the variables were extracted from where they have been documented.

3.2 Methods of Data Collection

Secondary data were collected from the Bank of Sierra Leone. Data were collected from the BSL Statistical Bulletin on Gross Domestic Product, External Debts, Exchange Rate, and Capital Expenditure, for a period between 1993 to 2023. Literatures relating to the topic of the study were also reviewed. We made use of textbooks, journals and internet materials from which valuable data were extracted.

3.3 Procedure for Data Analysis and Model Specification

Data were analyzed using ordinary least square (OLS) and tests of significance using the 'T' test. A diagnostic test to ensure the robustness of the work was done using the Augmented Dickey-Fuller (ADF) unit root test, co-integration and error correction method. The Ordinary Least Square (OLS) Analysis method adopted is appropriate for the study in that the study is an impact study. It, therefore, deals with how one variable affects the other. It is a relationship study, a cause-and-effect study. It looks at how changes in one variable (independent variable) affect the other (dependent variable). The research examines the relationship between external debt and various economic growth indices. This falls in line with the tenets of the OLS adopted.

Linear regression equations were formed, and regression analyses were performed based on the popular regression function from previous studies.

$$Y = a + bx$$

This is modified in line with the hypotheses. The models were used to determine the relationship between external debt and economic growth indices as contained in the various hypotheses, and external debt service payment and total government revenue were also included in the hypothesis.

H_{o1}: Sierra Leone's external debts have not significantly impacted the Gross Domestic Product.

The mathematical form relating external debt to Gross Domestic Product is shown below.

$$GDP_t = f(eds) \quad (1)$$

To make the above equation estimable, it is transformed as equation (2) below,

$$GDP_t = a_o + b_1 eds_t + \mu_t \quad (2)$$

Where,
GDP_t = Gross Domestic Product,
a_o = a constant,
b_1 = coefficient of the independent variable,
eds_{t1} = external debts,
μ_t = the disturbance term or error term.

H_{o2}: There is no significant impact of Sierra Leone's external debts on Capital Expenditure.

The mathematical form relating external debt with Government Capital Expenditure is shown below.

$$Govcap_t = f(eds) \quad (1)$$

To make the above equation estimable, it is transformed as equation (2) below,

$$Govcap_t = a_o + b_1 eds_{t1} + \mu_t \quad (2)$$

Where,
$Govcap_t$ = Government Capital Expenditure,
a_o = a constant,
b_1 = coefficient of the independent variable,
eds_{t1} = external debts,
μ_t = the disturbance term or error term,

H_{o3}: Sierra Leone's external debt does not significantly impact the Exchange Rate. The mathematical relationship is expressed below.

$$Exr_t = f(eds) \quad (1)$$

To make the above equation estimable, it is transformed as equation (2) below,

$$Exr_t = a_o + b_1 eds_{t1} + \mu_t \quad (2)$$

Where,
Exr_t = Exchange Rate,
a_o = a constant,
b_1 = coefficient of the independent variable,

eds_{t1} = external debts,
μ_t = the disturbance term or error term,
b_1 = coefficient of the independent variable,
μ_t = the disturbance term or error term.

4. Data Presentation and Analysis

The results of the ordinary least square (OLS) regression are presented in this. The analysis of the results involves subjecting the parameter estimates of the model to various theoretical and statistical first-order tests to determine the reliability of the parameter estimates. Three OLS models were estimated: model one was estimated to ascertain the impact of external debt stock on the Gross Domestic Product of Sierra Leone, the second model was estimated to ascertain if Sierra Leone's External Debt stock has a significant effect on government capital expenditure while the third model estimate was to determine if Sierra Leone External Debt stock significantly affect the exchange rate.

4.1 Analysis of Data

4.1.1 Analysis of the Impact of External Debts on GDP

Ho_1: Sierra Leone's External Debts have not significantly impacted the Gross Domestic Product.

Table 1: Unit Root test on variable of the first model

Variable	Variable at level form				Variable at difference form				Order of integration
Variable	**ADF Stat.**	**Lag**	**5%**	**10%**	**ADF Stat.**	**Lag**	**5%**	**10%**	
Lends	-2.023	1	-298	-2.62	-3.165	1	-2.99	-2.62	I[1]
Lngdp	1.879	2	-2.99	-2.62	-3.567	2	2.99	2.63	I[1]
Ecm_1	0.310	0	-1.95	-1.60	Na	Na	Na	Na	Nc
Note: na = not applicable; nc = not cointegrated.									

Source: Authors computation, 2024.

Unit root test was applied to the variables that were used in the first model. As shown in Table 1 above, external debt and gross domestic product variables appeared to have unit root at their level form because, at both 5 per cent and 10 per cent, they have the absolute Augmented Dickey-Fuller (ADF) statistics greater than the critical ADF statistics. For instance, at a 5 per cent level of significance, external debt and gross domestic product have absolute ADF of 2.023 and 1.879, respectively, while their critical ADF is 2.99. However, when we considered them in their first different forms, they calculated their absolute ADF to be 3.165 and 3.567, respectively, and the critical ADF for both external debt and gross domestic product in absolute term was 2.99. The linear combination of external debt and gross domestic product was subjected to the unit root test, which is otherwise called the co-integration test, but was found not to be co-integrated. This is because the disturbance term (Ecm_1) was found to have a unit root at its level form. Thus, the long-run relationship between external debt and gross domestic is shown below.

Table 2: Result of Impact of Sierra Leone External Debt on lnGDP

Variable	Coef.	Std error	t-value
Lends	0.140722	0.029492	4.77
Cons	5.182225	0.18371	28.21
Note: r^2=0.4234			

Source: Authors computation, 2024.

The result in Table 2 above suggests that there is a positive relationship between external debt stock and GDP in Sierra Leone. This implies that an increase in government debt leads to the growth of Sierra Leone's economy. The theoretical explanation of the relationship between debt and economic growth is explained by Elmendorf and Mankiw (1999), who noted that a budget deficit created by reducing taxes leaves the household with more after-tax income, and this raises aggregate demand the result above is in line with a priori expectation. The rise in aggregate demand will raise income and, hence, economic growth. However, they emphasized that this only occurs in the short run when prices and wages are sticky. Thus, in the short run, external debt stock should have a positive impact on economic growth.

The application of the test of significance shows that external debt has a statistically significant impact on the economic growth of Sierra Leone. This is because the absolute value of t-calculated, which is 4.77, is greater than the critical t-value of 2.042 at a significance level of 0.05. Therefore, the null hypothesis that external debt stock has not significantly impacted GDP was rejected, while the alternate hypothesis, which states that Sierra Leone's external debts have significantly impacted the Gross Domestic Product, was accepted. The coefficient of 0.141 shows that a percentage increase in the rate at which the economy incurs external debt will make economic growth go up by about 0.141 per cent.

The coefficient of determination (r^2), which measures the power of the model, is quite high. As shown in Table 2 above, the value of r^2 is 0.42 this implies that about 42 per cent variation in the economic growth was explained by the variation in the external debt stock.

4.1.2 Analysis of the Relationship between External Debt and Capital Expenditure

H_{o2}: There is no significant relationship between Sierra Leone's External Debts and Capital Expenditure.

Table 3: Unit Root Test on the Variables of the Second Model

Variable	Variable at level form				Variable at difference form				Order of integration
Variable	**ADF Stat.**	**Lag**	**5%**	**10%**	**ADF Stat.**	**Lag**	**5%**	**10%**	
Lends	-2.023	1	-298	-2.62	-3.146	1	-2.99	-2.62	I[1]
Lngovcap	-1.320	2	-2.97	-2.62	-3.842	1	-2.99	-2.62	I[1]
Ecm_2	-1.337	0	-1.95	-1.60	Na	Na	Na	Na	Nc
Note: na= not applicable, nc= not co-integrated.									

Source: Authors computation, 2024.

It has been established that external debt is integrated into order one I [1]. In other words, external debt has a unit root. Furthermore, government capital expenditure was also subjected to the unit root test but like the external debt, it was found to have unit root because its absolute value of ADF statistics is 1.320, and it is less than the critical ADF value of 2.97 at a significance level of 0.05. At its first difference, government capital expenditure does not have a unit root because the calculated ADF statistics at its absolute term is 3.842 and the critical value at the significance of 0.05. The linear combination of external debt and government capital expenditure was found not to be co-integrated as Ecm_2 turned out to be non-stationary. Thus, the long-run model was estimated and shown in the table below.

Table 4: Result of the Relationship between Sierra Leone's External Debt and Capital Expenditure

Variable	Coef.	Std error	t-value
Lneds	0.8104078	0.1086883	7.46
Cons	-0.177900	0.6770258	-0.26
Note: r2=0.642			

Source: Authors computation, 2024.

Table 4 above shows that external debt stock is positively related to government capital expenditure. In other words, an increase in the external debt stock increases the government's capital expenditure. It should be noted that government capital expenditure represents government spending on social capital such as schools, hospitals, roads, etc., hence synonymous with public investment. By implication, an increase in external debt brings about increase in government capital expenditure. However, the result shows that at a significance level of 0.05, the calculated t-value in absolute terms is 7.46 and greater than the critical t-value of 2.042. Hence, we do not accept the null hypothesis that there is no significant relationship between Sierra Leone's External Debts and capital expenditure. The coefficient of 0.81 implies that government capital expenditure will go up by about 0.81 per cent for one per cent rise in the external debt.

4.1.3 Analysis of the Impact of External Debt on Exchange Rate

H_{03}: Sierra Leone External Debts do not Significantly Impact on Exchange Rate.

Table 5: Unit Root test on the variables of the third model

Variable	Variable at level form				Variable at difference form				Order of integration
Variable	ADF Stat.	Lag	5%	10%	ADF Stat.	Lag	5%	10%	
Lends	-1.043	1	-298	-2.62	-3.146	1	-2.99	-2.62	I[1]
Exr	-0.320	2	-2.99	-2.62	-3.569	1	-2.99	-2.62	I[1]
L1Ecm_3	-0.542	0	-1.95	-1.60	Na	Na	Na	Na	Nc
Note: na= not applicable; nc= not co-integrated									

Source: Authors computation, 2024.

The exchange rate was found to have a unit root problem because at a significance level of 0.005, the calculated ADF value is less than the critical ADF statistics. However, its first

difference is that the calculated ADF statistics are 3.569 in an absolute sense, and it is greater than the critical ADF value of 2.99 at a significance level of 0.005. This suggested that at its first difference, the exchange rate is stationary, which implies it is integrated with order one. Further tests on the linear exchange rate and external debt combination showed that they are not co-integrated. Hence, there was no need for error correction.

Table 6: Result of Impact of External Debt Stock no on the Exchange Rate

Variable	Coef.	Std error	t-value
Lends	21.62333	4.28119	5.05
Cons	-62.9378	26.6678	-2.36
Note: R2 = 0.451			

Source: Authors computation, 2024.

Table 6 shows a positive relationship between exchange rate and external debt. In other words, a rise in external borrowing raises the exchange of (depreciates) naira visa-vis other currencies. This positive relation conforms to economic theory because the increase in external borrowing implies increased demand for foreign currency, which makes foreign currency appreciate while the domestic depreciates. The result also reveals that external debt significantly impacts the exchange rate in Sierra Leone. Following this, we rejected the null hypothesis that Sierra Leone's external debts do not significantly impact the exchange rate. Thus, the exchange rate will grow by 22 per cent following a percentage increase in external debt. The r^2 value shows that external debt variation explained about 45 per cent variation in the exchange rate.

4.3 Discussion of Findings

The findings were discussed in line with the hypotheses.

Ho_1: Sierra Leone's Eternal Debts have not significantly impacted the Gross Domestic Product.

The finding was that external debt positively relates to gross domestic product in Sierra Leone. This aligns with the a priori expectation that debt would enhance economic growth in line with the postulate of Keynesian theory. The above finding is in agreement with the findings of Sulaiman and Azeez (2012), Iya *et al.* (2013), Ishola *et al.* (2013) and Onyekwelu *et al.* (2014). The positive correlation between debt and economic growth could be due to the excellent utilization and management of debt as seen in the Asian tiger-Malaysia, Singapore, Indonesia, Taiwan and South American country Brazil (Momodu, 2014). The positive growth might be due to the investment of the borrowed fund into productive activities and proper management of such investment such that the return from it is above what is required to service the debt and repay the capital.

The above finding is in contrast with the result of Atique and Malik (2012), Karagol (2002), Adepoju *et al.* (2007), Ezeabasili *et al.* (2011), Fosu (1996), Alfredo and Francisco (2014), Bamidele and Joseph (2013), Choong *et al.* (2010), Udeh *et al.* (2016) and Pattilo *et al.* (2004). However, Ogunmuywa (2010) found an insignificant casualty between debt and economic growth. The growth of 0.14% is in agreement with the economic situation

on the ground, which does not depict significant economic development compared to the quantum of debt Sierra Leone has been carrying over the years.

H_{02}: There is no significant relationship between Sierra Leone's External Debts and Capital Expenditure.

The regression result showed that external debt stock is positively related to government capital expenditure. The above finding is in agreement with the a priori expectation, as external debt was expected to be used for capital projects, not for consumption. It is expected that external debts should be invested in revenue-yielding ventures to bring about growth and development. The above finding was not in agreement with the ANOVA result of Onyekwelu *et al.* (2014) and Enyiuche and Obiefuna (2011). This points to the possibility of misappropriation mismanagement or selection of non-revenue-yielding social projects. This brings to fore the warning of Samuelson quoted in Okoye and Ani (2004) that avoidance of waste and inefficiency and proper setting of social priorities are two fiscal disciplines the nation must abide by since the level of economic growth can be said to be at variance with the quantum of external debt incurred by Sierra Leone.

Ho_3: External Debts do not significantly impact the Exchange Rate.

The result showed a positive relationship exists between exchange rate and external debt. This implies that external debts bring about the depreciation of the Leone, resulting in the rising exchange rate. The results were in agreement with the findings of Draz and Ahmed (2015) and Saheed *et al.* (2014). The revelation by the finding that 22% variations in exchange rate could be attributable to external debt brings to mind the need for prudent management and harnessing of abundant resources to avoid borrowing.

5. Summary of Findings, Conclusion and Recommendations

This encompasses a summary of findings, implication of findings, conclusion and recommendations to enhance Sierra Leone's economic growth.

5.1 Summary of Findings

We discovered that:

1) External Debt has significantly impacted GDP. This means that there is a positive relationship between external debt and GDP.
2) Sierra Leone's External Debt has positively impacted the Capital Expenditure. That is, there is a positive relationship between External Debt and Capital Expenditure.
3) Sierra Leone's External Debt significantly impacted the Exchange Rate. That is, there is a positive relationship between External Debt and Exchange Rate.

5.1.1 Implications of Findings

The finding in the hypothesis testing showed a positive relationship between external debt and GDP, which implies that debt accumulation stimulates the economy, leading to an increase in GDP. However, a negative relationship between external debt and capital expenditure was found in the testing of hypothesis II, which signals that external debts were mismanaged, misappropriated, or not invested in capital projects, and the money for capital projects was utilized for debt servicing and repayment. It implies that as more debts accumulate, capital expenditure reduces, thereby stifling the country's infrastructural development.

A positive relationship between external debt and exchange rate implies that external debt is detrimental to the value of naira. The amount of a nation's external debt negatively affects the currency's value compared to other currencies. A slight reduction in the currency's value due to small external debt encourages export, resulting in increased demand, employment and economic growth. However, a highly depreciated currency following high debt kills import-dependent industries, loss of jobs and unemployment with its multiplier effect. This is due to the high cost of imports (raw materials, spare parts and sub-assemblies).

5.2 Conclusion

This work has shown that debt should be approached with caution, as excessive accumulation of debt is detrimental to the economy. Although, debt could be used to stimulate the economy, it may not enhance it. Similarly, debt services may return debtor nations to what may be termed another era of colonization (neo-colonialism) as what is generated is transferred out of those nations on the grounds of debt servicing. This stifles growth, development and independence. In as much as a low exchange rate tends to encourage economic growth, a highly devalued currency might close down import-dependent companies (raw materials and sub-assemblies) with its consequences.

Therefore, the quest for development growth should be cautiously pursued while using external debts.

5.3 Recommendations

The following recommendations were made:

1) External debt should be obtained by the government when it is absolutely necessary and applied to productive economic ventures, not for social services. By doing so, the marginal productivity of the loan might be greater than the interest payable on the loan, thereby bringing about economic growth. It has been argued that the marginal productivity of capital should be higher than the world interest rate for developing countries so that such countries can benefit from external borrowing (Eaton, 1993).
2) The government should separate politics from economic management. The absorptive capacity using suitable indices such as debt to GDP ratio and debt servicing to total revenue and Debt Laffer Curve should be guides to nations while

contemplating new debt acquisition. Debt Laffer Curve is the relationship between the amount of debt repayment and the total debt.

3) The government should strengthen anti-corruption agencies like the Anti-Corruption Commission (ACC) to reduce embezzlement and misappropriation to the barest minimum. This could be done by reviewing enabling laws and establishing them. When corruption is reduced, resources can be saved and properly utilized, and external borrowing may not be needed.
4) The government, in its quest for economic growth/development, should look inward and in line with the endogenous growth theory postulate instead of external debt accumulation. Whenever there is a shortage of funds from savings, other sources open to the government to generate funds, like raising taxes and other economic policies, should be explored, with external debt as the last option.

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